

REMARKS

Claims 1, 42, 47-52 and 57-65 were previously pending in this application, of which claims 1-41 and 60-65 are withdrawn from consideration. New claims 66-71 further defining the applicant's contribution to the art have been added. As a result claims 42, 47-52, 57-58 are pending and under examination with claims 42, 50 and 57 being independent claims. New claims 66-71 are dependent claims, allowable for at least the same reasons as explained below in connection with the claims from which they depend.

Rejection under 35 U.S.C. §112

Claims 50-56 were rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement. Claims 53-56 have been cancelled, rendering this rejection moot as to those claims. As to claims 50-52, this rejection is respectfully traversed. In addition to the enablement issue raised by the Examiner in the Office Action, lack of enablement as to the source of energy input or fuel for the processes described was raised by the Examiner during the telephonic interview of November 3, 2006. Both enablement issues are now discussed.

As noted in the response augmented by this supplement, the Examiner has identified in the written description the recitation of sufficient details for one skilled in the art to practice the invention without undue experimentation. In summary, the skilled artisan clearly would know such common engine and machine components as springs, flywheels, linkages and the like, and their usage. All this is well known to the skilled artisan who will employ these same techniques in solution of these same problems. In addition, the Applicant now points out several passages in the written description of the instant application which provide additional enablement for the invention as claimed.

In the Summary, the Applicant describes that some aspects of embodiments of the invention include return systems for returning the piston and push rod of the machine described to a starting position. Those systems are explicitly named and described, including, particularly, an arrangement including two counter-operating pistons in which one piston, when producing power, returns the other to its starting position.

Various aspects of embodiments include a return system for moving the piston back to the first position. The return system can include a return spring for pushing the push rod. The return system can further include a second system comprising a second solvent chamber, a second pressure chamber, a second semi-permeable barrier separating the

second pressure chamber from the second solvent chamber and second piston that moves in response to solvent flow from the second solvent chamber through the semi-permeable barrier into the second pressure chamber, wherein the second piston pushes the first piston back to the first position. [See *Specification*, page 3, lines 10-17.]

In the Detailed Description, the Applicant describes the return systems in somewhat greater detail, explaining them as follows.

Any number of mechanical devices 70 connected to the push rod 78 can be driven directly or indirectly by the system. For example, the mechanical device 70 may comprise an alternator, a generator, a gear, a fly wheel, a hydraulic motor, a lever or any other device capable of being driven by a reciprocating push rod.

The conversion device 60 may also include an exhaust channel 77 in communication with the connecting channel 307 for exhausting used solvent and solute solution from the system, and an exhaust valve 73 for controlling the flow of fluid through the exhaust channel. After the push rod 78 moves fully in the forward direction, the connecting valve 311 between the conversion device and the pressure chamber closes and the exhaust valve 73 opens to allow fluid flow through the exhaust channel. A return spring, or other suitable device, reverses the direction of the push rod 78 to the starting position. Upon the opening of the exhaust valve 73, there is little or no resistance to the return of the push rod 78 since the pressure goes to one atmosphere. The first piston 69, the second piston 64 and the diaphragm 67 return to their respective starting positions, at which time the exhaust valve 73 closes. The return movement causes the solvent solution filling the connecting channel to drain into the exhaust channel 77.

According to another embodiment, the device for returning the push rod 78 back to the starting position may comprise a second power supply system operating in conjunction with the first power supply system. The first and second power supply system preferably operate in an alternating manner, such that the push rod of the second power supply system pushes the push rod of the first power supply system back to the starting position by moving in the forward direction, and vice versa. [See *Specification*, page 17, lines 4-25.]

The two-piston example is further described in connection with Figure 9, at pages 24 and 25. Pressure applied alternately by two pistons is applied to a hydraulic motor through hydraulic fluid. The hydraulic fluid is recycled back to the cylinders in which the pistons operate through a hydraulic fluid recycling system. While one piston is delivering power, the other may be receiving recycled hydraulic fluid, thus driving the other back to its starting position.

As for the sources of energy which are converted to useful form, the Applicant notes for example, the description at page 18 of Figure 5, describing how energy is used to recycle the solvent and solute materials.

The energy to produce the vacuum and heat which effect the separation of the solvent and solute may be supplied, for example, by scavenging heat from the environment and using the

vacuum produced by operation of the apparatus according to the claimed method. Alternatively, the vacuum may be produced by a vacuum pump that is powered by the operation of the apparatus according to the claimed method. *See Specification*, page 18, lines 3-14; and, page 19, lines 1-8.

Alternatively, the energy applied to the contents of the blowdown receiving chamber to separate the solvent and solute, i.e., the input energy for the system, may be entirely externally and separately supplied.

One skilled in the art will recognize that the recycling system 50, i.e., the blowdown receiving chamber 56, the condenser 57 and associated channels, need not be attached to the system 10, but may exist as a separate and/or disconnected system. [*See Specification*, page 19, lines 25-27.]

Because the written description conveys to the skilled artisan sufficient information to practice the invention without undue experimentation, the application meets the requirements of Section 112, first paragraph, as to claims 50-52.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §§102 and 103

Claims 42, 43 and 50-55 have been rejected under 35 U.S.C. §102(b) as being anticipated by German Patent No. DE 31 21 968 to Grönecke (hereinafter *Grönecke*). Claims 43 and 53-55 were previously cancelled, rendering this rejection moot as to those claims. Claims 42 and 50 were previously amended, overcoming this rejection as to claims 42 and 50-52.

As explained in Applicant's prior response, the reference does not show the use of a vacuum to assist with the separation and recycling part of the claimed method.

Claims 51 and 52 depend from claim 50, and so the elements thereof are also not shown by *Grönecke*. Claims 42 and 50-52 therefore cannot be anticipated by *Grönecke*.

Accordingly, withdrawal of this rejection is respectfully requested.

Claims 57-59 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,906,250 to Loeb (hereinafter *Loeb*).

As explained in Applicant's prior response, *Loeb* simply fails to show a closed solvent chamber in which a vacuum develops. *Loeb* shows a solvent chamber in which ambient pressure exists, but a vacuum does not develop as the chamber is open to inflow from outside.

Accordingly, withdrawal of this rejection is respectfully requested.

Claims 42-55 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Loeb* in view of *Grönecke*. Claims 43-46 and 53-55 have been cancelled, rendering this rejection moot as to those claims. As to claims 42 and 47-52, claims 42 and 50 have been amended, overcoming this rejection.

As explained in Applicant's prior response, *Loeb* teaches systems similar to *Grönecke*, further including recycling of the fresh water and brine used as solvent and solute solution. Neither reference discloses, teaches or suggests using a vacuum to aid in the recycling of the solvent and solute solution, as claimed.

Claims 51 and 52 depend from claim 50, and so also cannot be obvious in view of the proposed combination. Claims 42 and 50-52 are therefore patentable over the combination of *Grönecke* in view of *Loeb*.

Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, reconsideration is respectfully requested. This application should now be in condition for allowance; a notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an accompanying payment, please charge any deficiency to Deposit Account No. 50/2762, Ref. E2002-700019.

Respectfully submitted,
Irving W. DeVoe, Applicant

By: /Gary S. Engelson/
Gary S. Engelson, Reg. No. 35,128
LOWRIE, LANDO & ANASTASI, LLP
One Main Street
Cambridge, Massachusetts 02142
Telephone: 617-395-7000
Facsimile: 617-395-7070